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SOURCE Tehnicki Pregled, No 6, 1950.THE OLIVE-OIL PROBLEM IN YUGOSLAVIA

Dr Andrej Masera

One of the most important problems in the area extending from Kopar, Istria, to Ulcinj, Montenegro, is the problem of the olive-oil industry. This branch of the economy, which should be a basic source of income for farmers and cooperatives in this area, has been in a state of crisis for the past 70 years. Mistakes made in this field during the past 30 years are still felt seriously.

The Yugoslav olive-oil industry requires planned development and large investments that may be amortized over a long period.

Yugoslavia had approximately 5 million olive trees in 1938. Assuming that this number had remained unchanged, and that the annexation of the Istria, Cres, and Losinj areas increased this number by 500,000, Yugoslavia would now have about 5.5 million olive trees.

However, a survey of olive orchards in Yugoslavia would show that, in the past 30 years, hardly any Yugoslav farmers have planted a single olive tree. To the contrary, every farmer has lost tens and tens of trees, so that the number of olive trees is constantly decreasing.

The following should be done: increase the number of trees; use agricultural methods which will insure a steady annual yield; increase the yield per tree; modernize the present hydraulic presses; design new hydraulic presses; improve the quality of oil; classify oil by quality and thereby protect progressive producers; and determine the percentage of acids available in olive oil for public consumption, and thereby protect customers.

To carry out at least some of the above, regional supervisory stations for the systematic and planned improvement of the olive-oil industry should be established. A large number of olive-tree nurseries, where farmers will always be

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able to obtain a sufficient number of seedlings, selected for and suited to Yugoslav coastal and island areas, should also be established. Farmers should be urged to plant new olive orchards and to rejuvenate old ones, that is, to prune old trees and fertilize the soil.

To insure sufficient quantities of fertilizer for olive orchards, it is necessary to increase the number of livestock in these areas. Farmers should be given fodder in return for olive mash, the main raw material for the production of industrial oils. This would be an incentive to farmers to promote cultivation of olive orchards. In addition to this, olive growers should be provided with sufficient quantities of potassium phosphate salts.

Yugoslav olive orchards are completely exhausted of potassium oxide and phosphoric anhydride. If these orchards were refertilized, the country would get much more than the present yield of one kilogram or less oil per tree. Yugoslavia would then have orchards regularly producing 2 kilograms of oil per tree.

Having achieved this yield, Yugoslavia could utilize arable land in the interior, now used for the cultivation of various oil plants, for more profitable plants. The cultivation of various plants for industrial oils, especially sunflowers, is ruining the soil. The only way to save such soil is to promote olive-oil culture. Good-quality olive oil sells for 1.6 times as much as other industrial oils.

Nothing has been done to exterminate tree and fruit parasites. Losses inflicted on olive orchards by such parasites amount to several million dinars annually. Trees infected with such parasites produce small quantities of oil. The quality of this yield is extremely poor.

The extreme backwardness of the Yugoslav olive-oil industry is evidenced not only by the failure to cultivate olive orchards properly, but also by the failure to process olives according to modern technical discoveries. Producers mix good olives with wory ones. Olives collected from trees are mixed with those collected from the ground and pressed together. Olives lie in heaps for weeks before they are pressed. Oil from the first pressing is mixed with oil from the second pressing. During the pressing process, hot water is poured over the mash. All this contributes, of course, to the high percentage of free acids in the finished product.

Olive oil produced in primitive presses, or even in so-called hydraulic presses, is not free of fruit particles, proteins, and various slimy substances. All these foreign elements usually cause various fermentation processes. After being stored for several weeks, good cooking oil becomes unfit for human consumption and must be used for soap production.

It is urgently necessary, therefore, to modernize Yugoslav olive-oil factories and olive presses. The presses are still of the most primitive type, although there are several hundred in use. The number of hydraulic presses available is very small. Besides, they, too, have become obsolete. Forced upon Yugoslavia by Italian industries, they were rejected for Italian domestic consumption 40 years ago. Yet these obsolete presses were supplied by Italian firms to Yugoslavia as recently as during World War II.

Analysis of olive mash in Yugoslavia, regardless of whether it has been pressed by a primitive handpress or a hydraulic press, shows a relatively large percentage of oil still present. Italian olive mash never contains more than 8 percent oil, not to mention mash, which contains only 5 - 6 percent oil and 25 percent moisture.

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An analysis of olive mash in 1947 - 1948 showed the following:

<u>Oil Factory</u>	<u>Moisture</u> (%)	<u>Oil</u> (%)
Zaton near Dubrovnik	26	15.47
Majkovi	17	14.18
Babinopolje	21	13.36
Sipan	26	12.24
Velaluka	17	14.50
Subsidiary of Velaluka	20	12.90
Another subsidiary of Velaluka	24	13.90
Lastovo	28	14.40
Murter	24	9.00

The "Zaton," "Majkovi," and "Babinopolje" Factories still operate in the most primitive way. The other factories have been mechanized with the Italian hydraulic presses described above.

An analysis of oil content of dry mash shows that Italian mash contains 8 percent oil and 92 percent organic and inorganic elements.

An analysis of dry mash in Yugoslav factories showed the following:

<u>Oil Factory</u>	<u>Oil</u> (%)	<u>Org and Inorg Elem</u> (%)
Zaton near Dubrovnik	20.90	79.10
Majkovi	17.00	83.00
Babinopolje	16.90	83.10
Sipan	16.90	83.40
Velaluka	17.4	82.60
Subsidiary of Velaluka	16.10	83.90
Another subsidiary of Velaluka	18.30	81.70
Lastovo	20.00	80.00
Murter	11.80	88.20
Average	17.30	82.70

Oil production in other Yugoslav oil factories is even less efficient. Yugoslav olive-oil factories extract only 75.70 percent of the olive oil from the olive; the remaining 24.30 percent is left in the mash.

Such a procedure might be justified if oil-extracting industries utilized waste mash and processed it into industrial oil. However, only a part of this mash is bought and processed into sulfur oil. The rest is left and used as fodder (though it is a very poor type of fodder) or as fuel.

When Yugoslavia has modern olive-oil factories, cooking-oil production can easily be increased. This would be at the expense of industrial-oil production, but the world-market price of cooking oil is twice the price of sulfur oil. Using such modern mills, Yugoslavia could purchase abroad all the industrial oil needed at half the price of cooking oil.

Olive oil containing more than 7 percent free acids should not be released for human consumption, but should be refined or, if possible, mixed with other vegetable oils. This would contribute to establishing a standard cooking oil.

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